

AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended): A system comprising: for sensing a characteristic of a droplet in an integrated circuit manufacturing equipment, the apparatus comprising:  
an integrated circuit manufacturing equipment having a wafer processing chamber;  
a print head configured to deposit a material on a wafer in the wafer processing chamber; and  
a sensor configured to receive a droplet from the print head, the sensor comprising:  
    a first plate and a second plate forming a capacitor, the first plate and the second plate being disposed to allow a the droplet to pass between them; and  
    an amplifier coupled to the first plate, the amplifier configured to generate an output signal indicative of a characteristic of the droplet.

Claim 2 (currently amended): The system apparatus of claim 1 wherein the sensor further comprising comprises:  
    a bias voltage coupled to the second plate; and  
    wherein the amplifier includes a charge sensitive amplifier.

Claim 3 (currently amended): The system apparatus of claim 2 wherein the sensor further comprising comprises an input transistor coupled between the amplifier and the first plate.

Claim 4 (currently amended): The system apparatus of claim 1 wherein the characteristic includes drop mass.

Claim 5 (currently amended): The system apparatus of claim 1 wherein the characteristic includes drop velocity.

Claim 6 (currently amended): The system apparatus of claim 1 wherein the print head comprises the droplet is from an ink-jet print head configured to deposit material on a wafer.

Claim 7 (currently amended): The system apparatus of claim 1 wherein the output signal is employed to calibrate a nozzle that dispensed the droplet.

Claim 8 (cancelled)

Claim 9 (currently amended): The system apparatus of claim 1 wherein the output signal is provided to a signal processing device.

Claim 10 (currently amended): The system apparatus of claim 9 wherein the signal processing device includes a computer.

Claim 11 (currently amended): The system apparatus of claim 1 wherein the apparatus is part of a sensor module sensor is located near a the wafer processing chamber to allow calibration of a the print head that dispensed the droplet.

Claim 12 (currently amended): The apparatus system of claim 11 wherein the print head includes a plurality of nozzles.

Claim 13 (currently amended): A system An apparatus in an integrated circuit manufacturing equipment, the apparatus comprising:  
an integrated circuit manufacturing equipment;  
means for dispensing a droplet in the integrated circuit manufacturing equipment;  
means for detecting the droplet; and  
means for generating a signal indicative of a characteristic of the droplet.

Claim 14 (currently amended): The system apparatus of claim 13 wherein the characteristic includes drop mass.

Claim 15 (currently amended): The system apparatus of claim 13 wherein the characteristic includes drop velocity.

Claim 16 (currently amended): A method of sensing a droplet characteristic ~~in an integrated circuit manufacturing equipment~~, the method comprising:  
dispensing a droplet from a print head;  
~~detecting a~~ the presence of the droplet between two parallel plates; ~~that form a capacitor; and~~  
generating an output signal indicative of a characteristic of the droplet;  
calibrating the print head based on the output signal; and  
using the print head to deposit a material on a wafer.

Claim 17 (cancelled)

Claim 18 (original): The method of claim 16 further comprising:  
processing the output signal to sense drop mass.

Claim 19 (original): The method of claim 16 further comprising:  
processing the output signal to sense drop velocity.

Claim 20 (original): The method of claim 16 further comprising:  
calibrating a nozzle based on the output signal.

Claim 21 (currently amended): A system comprising: An apparatus for tuning a mechanism for dispensing materials in an integrated circuit manufacturing equipment, the apparatus comprising:  
a sensor configured to detect a passing material;  
an amplifier coupled to the sensor, the amplifier configured to generate an output signal indicative of a characteristic of the material; and  
a control system configured to generate a tuning signal based on the output signal, the tuning signal being provided to a mechanism that dispensed the material.; and

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an integrated circuit manufacturing equipment, the integrated circuit manufacturing equipment being configured to employ the mechanism that dispensed the material to perform deposition on a wafer.

Claim 22 (currently amended): The system apparatus of claim 21 wherein the output signal is indicative of a mass of the material.

Claim 23 (currently amended): The system apparatus of claim 21 wherein the output signal is indicative of a drop velocity of the material.

Claim 24 (currently amended): A system comprising: An apparatus for sensing a characteristic of a material in an integrated circuit manufacturing equipment, the apparatus comprising:

an integrated circuit manufacturing equipment having a capacitive sensor configured to sense a passing material; and

an amplifier coupled to the capacitive sensor, the amplifier configured to generate an output signal indicative of a characteristic of the material.

Claim 25 (original): The apparatus of claim 24 wherein the characteristic includes drop mass.

Claim 26 (original): The apparatus of claim 24 wherein the characteristic includes drop velocity.